

all its glossy beauty. It was only in this last year (1879), after very diligent research, that I succeeded in obtaining good fruiting specimens of this plant.

P.S.—Specimens of all the Plants described in this Paper have been forwarded with it to the Manager of the New Zealand Institute, for the Herbarium of the Colonial Museum, Wellington.

ART. LV.—*Contribution to the Lichenographia of New Zealand.*

By CHARLES KNIGHT, F.L.S.

Plates XII. and XIII.

[*Read before the Wellington Philosophical Society, 21st February, 1880.*]

1. *Sticta amphisticta*, Kn. ✓

Thallus pallido-ochro-fuscescens aut passim hepatico-fuscescens ambitum versus saepe fuscus mediocris laevis parum rigescens, supra punctis albis sparsis pseudo-cyphelloideis minutis conspersus, laciniato-divisus, laciniis subcaniculatis varie lobatis v. grosse sinuato-crenatis, apice dichotomis v. obtusis; subtus ochro-fuscus aut pallido-fuscescens medio fusco-tomentosus; cyphellæ urceolatæ pallidæ, margine saepe prominulo; cephalodia concoloria minuta parca. Apothecia sparsa badio-rufa, margine tenui crenulato pallido aliquando integro. Sporæ incolores v. dilute luteolæ oblongo-fusiformes v. oblongæ, 1-3-septatae, longit. ·026, crassit. ·007 mm.

Ad cortices.

2. *Sticta episticta*, Nyl.

Thallus ochroleucus v. pallido-ochraceo-fuscescens mediocris vix nitidiusculus, supra punctis albis pseudo-cyphelloideis minutis sparsis conspersus, laciniatus, laciniis varie lobato-divisus subcaniculatis ambitu minute crenatis passim ibi laciniatulo-dissectis v. fere isidiosis; subtus ochraceus puberulus subnudus medio fusco-tomentosus, cyphellis parvis urceolatis perpaucis v. nullis pallidis, cephalodiis concoloris minutis parcis. Apothecia rara v. rarissima badio-rufa margine thallino crenulato v. leviter denticulato-inæquali cincta. Sporæ incolores v. dilute luteolæ oblongo-fusiformes v. oblongæ, 1-3-septatae, longit. ·03, crassit. ·007 mm.

Ad cortices.

3. *Pannaria atrofumosa*, Kn.

Thallus cæruleo-olivaceus v. atro-fumosus squamulosus diffracto-areolatus, squamulis minutis concavis crenato-orbiculatis ambitu minutissime granulosus v. furfuribus, hypothallo atro late marginatus. Apothecia innata

v. immixta lecanorina intus incoloria, disco plano luteo-rubro v. luteo-fusco in centro plerumque fisso v. depresso v. decolore, margine nonnihil gyrato elevato minutissime granuloso, paraphysibus capillaribus discretis. Sporæ in ascis cylindricis uniseriales ellipsoideæ incolores, longit. ·015, crassit. ·008 mm.

Ad cortices.

Pannaria immixta v. gyrantha, Nyl. in litt.

4. *Pannaria apiculata*, Kn.

Thallus sordide fuscus passim fumoso-fuscus v. plumbeo-cinereus minute squamuloso-microphyllinus (squamulis nonnihil laciniato-effiguratis) v. diffracto-areolatus v. detritus tum demum hypothallo nigro passim v. omnino nudo. Apothecia biatorina brunnea v. rufo-nigra plana interdum convexa intus incoloria v. omnino dilute luteola, margine pallidiore tenui integro. Sporæ in ascis late cylindricis ellipsoideæ sèpissime utrinque apiculatæ dilute fuscescentes, longit. ·018, crassit. ·009 mm.

Ad cortices.

5. *Pannaria triptophylla*, Ach.

Apothecia biatorina margine erecto. Sporæ ellipsoideæ. *Hypothecium fusco-nigricante*. Hypothallus cæruleo-nigricans.

Ad cortices.

6. *Pannaria subsimilis*, Kn.

Thallus glauco-cervinus squamulosus v. microphyllo-squamulosus, squamulis membranaceis contiguis adpressis rotundato-incisis singulis e centro radiantibus, granulis goniæ cærulescentibus, hypothallo cærulescenti-nigro limitatus. Apothecia rubra v. croceo-rubra biatorina plana marginata, margine pallido integro tenui discum æquante, excipulo proprio luteo-fusco, hypothecio concolore, paraphysibus gracilibus non bene discretis (apice non dilatis et vix incoloratis). Sporæ in ascis cylindraceis ellipsoideæ incolores v. dilute luteolæ, longit. ·015, crass. ·006 mm.

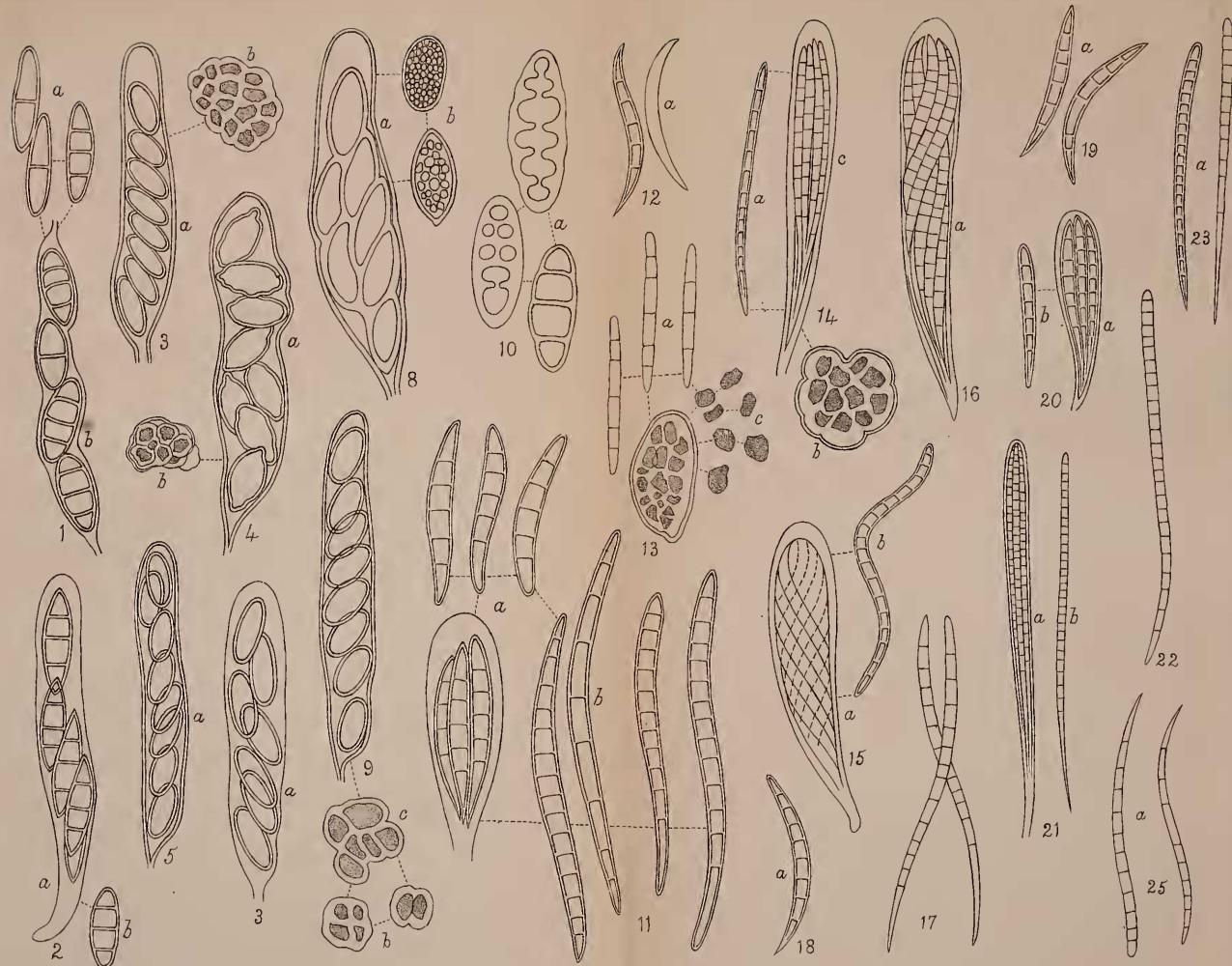
Ad cortices.

The colour of thin sections of the apothecia seen by reflected light is a delicate rufous yellow.

Syn.: *Pannaria nigro-cincta*, Nyl., Handbook New Zealand Flora, fol. 575.

There is some confusion in respect of Montagne's lichen. Both Babington and Nylander consider the New Zealand lichen to be the *Psoroma nigro-cincta* of Montagne. But in fact Montagne's plant, of which there is an authentic specimen in the Kew Museum (probably contributed by Montagne himself), is a true *Psoroma*; the thallus with large green goniidia, apothecia *biatorine*, excipulum of a pale brown or "Indian pink," and agreeing closely with the description in "Sylloge Plant. Crypt." On the other hand No. 51 of Leighton's Ceylon Lichens, "*Pannaria nigro-cincta*, Mont," is a true *Pan-*





naria; apothecia *lecanorine* with “granulæ gonimæ” in place of gonidia, the granules large, cæruleo-glaucous, margin prominent, crenulate. Again, No. 142, Spruce's Lich. Amaz. et And., is a true *Psoroma*: apothecia biatorine symphytoporous, margin obscure, spores smaller, and the thallus with well defined layer of gonidial masses.

7. *Pannaria amphibola*, Kn.

Thallus e glauco-rufescente helvolus microphyllinus, phyllis subimbri-catis planiusculis lobulatis, lobis crenatis ambitu albo-furfuraceis, granulis gonimis glauco-cæruleoscentibus, hypothallo rubro-fusco v. nullo. Apothecia luteo-rufa biatorina plana marginata intus luteo-fusca, margine concolore integro, paraphysibus crassis adglutinatis. Sporæ ellipsoideæ interdum utrinque attenuatæ simplices incolores, longit. ·012, crass. ·006 mm.

Ad cortices.

P. amphibola, Nyl. in litt.

8. *Pannaria biatorina*, Kn.

Thallus albo-virescens squamulosus, squamulis adpressis minutis crenulatis, granulis gonimis glauco-virescentibus, hypothallo nigro. Apothecia biatorina sparsa aurantiaca (diam. 0·4 mm. v. minora) superficialia intus pallida marginem pallidiorem demum æquantia, margine primo elevato integro, paraphysibus capillaribus adglutinatis. Sporæ in ascis clavatis ellipsoideæ subhyalinæ demum dilute luteolæ granulosæ, longit. ·02 mm., crassit. ·01 mm.

Supra Jungermannias.

9. *Pannaria subimmixta*, Kn.

Thallus glauco-albescens squamulosus, squamulis parvis rotundis crenatis confertis v. imbricatis, hypothallo nigro, granulis gonimis glauco-viridis v. glauco-brunneis 1–4 in nodulo singulo (microscopii area granula gonima obsita). Apothecia lecanorina fusca v. brunnea plana, margine crenato. Sporæ uniseriales simplices ellipsoideæ, longit. ·014, crass. ·008 mm.

Supra terram et lapides.

10. *Physcia plinthiza*, Nyl.

Thallus albo-glaucens corrugatus rotundato-lobato-incisus in centro granulatus, laciniis arcte adpressis ambitu obscure crenatis. Apothecia madefacta diam. 1·7 mm. intus incolorata v. dilute glaucescentia, disco fuso v. atro-fusco plano, margine subinfuso tumido crenulato, excipulo thallino celluloso gonimico, gonimia magna numerosa, excipulo proprio (hypothecio) ex utroque latere evanescente, paraphysibus discretis apicibus elliptico-dilatis. Sporæ in ascis cylindraceo-saccatis ellipsoideæ fuscae 4–6-loculares, loculis tubulo junctis et mediis sœpe didymis (ita medio series 2 adsunt transversæ biloculares), longit. ·08, crassit. ·012 mm.

Ad cortices.

11. *Lecanora babingtonii*, Mass.

Thallus tenuis albo-cinereus granulosus v. minutissime squamulosus, squamulis arete adpressis. Apothecia rosea v. luteo-coccinea (diam. 1·5 v. minora) marginata, margine granulato tandem flexuoso, excipulo thallino albido v. dilutissime colorato gonidia continente, excipulo proprio fibrato supra evanescente, paraphysibus non bene discretis apice minute granulosis non dilatis. Sporæ in ascis saccatis subarcuatæ v. leviter curvatæ aciculari-fusiformes 5-septatae, longit. ·035, crassit. ·004 mm.

Ad cortices.

Probably Babington's *L. punicea*, Ach. (Flora N.Z., p. 292). Comparing our lichen with Leighton's *L. punicea* (Ceylon Lichens, No. 62), it is seen that the thallus of the latter is fusco-cinereous, while the spores are ·07 mm. in length, and the septæ from 7–15 in number (v. fig. No. 11, b.), and these measurements agree with Nylander's figure, v. Nylander's *Lichenes Novo-Granatenses*, p. 32, fig. 7, tab. 1, reproduced here to the same scale as all the other figures are drawn, v. fig. No. 11, c.

12. *Bacidia subscripta*, Kn.

Thallus sordide cinerascens v. sordide cinereo-albidus tenuis continuus v. minute areolatus v. fissus indeterminatus. Apothecia superficialia atro-fuscescens nuda plana v. concava marginata (diam. 1 mm.)—raro in juniore pallide fusca—margine concolore tenui, excipulo dilute fuscescente a lateribus v. a basi et lateribus per lineam tenuem fuscum contento, strato subhymeniale e pseudo-gonidiis liberis sphæricis incoloratis—aliis minutis aliis sat grandibus—formato, paraphysibus brevibus subcassis adglutinatis grumosis. Sporæ in ascis clavatis fusiformi-aciculares subspiraliter contortæ v. in arcum curvatæ 3–7 septatae v. simplices (septis invis?), longit. ·04, crassit. ·0035 mm.

Ad cortices arborum.

13. *Bacidia glomerulosa*, Kn.

Thallus sordide ochraceo-cinerascens byssaceo-pulverulens ubique diffractus v. dehiscens granulas gonimas virides in nodulis magnis receptas continens. Apothecia adnata v. innata (diam. 0·5 mm.) atro-fusca, margine evanido, excipulo dilute colorato, hymenio fusco, paraphysibus gracilibus non bene discretis apicibus fuscis. Sporæ rectæ aciculares 3–7 septatae, longit. ·035, crassit. ·0025 mm.

Ad cortices arborum.

14. *Bacidia eucoccodes*, Kn.

Thallus cinereo-viridescens granulosus v. microphyllino-granulosus effusus granulas gonimas virides in nodulis receptas continens. Apothecia innata v. adnata fusco-atra plana v. convexa marginata (diam. 1·3 mm.), margine concolore obscurum demum tenui, excipulo dilutissime colorato ab

linea atro-fusca cincto, paraphysibus gracilibus discretis. Sporæ in ascis clavatis aciculares gracillimæ infra attenuatæ rectæ sat 14-septatae, longit. ·06, crassit. ·0015 mm.

Ad cortices arborum.

15. *Bacidia spirospora*, Kn.

Thallus cinerascens tenuis laevis continuus v. subtiliter fissus, gonidia vera offerens, per lineam atram determinatus. Apothecia nigro-fusca (diam. 1 mm.) plana demum convexa marginata, margine concolore, paraphysibus gracilibus non bene discretis, apicibus fuscis subincrassatis. Sporæ in ascis clavatis aciculares infra attenuatæ circiter 18-septatae, septis distinctis, maxime spiraliter curvatae, longit. ·06, crassit. ·003 mm.

Ad cortices arborum.

16. *Bacidia melastegia*, Kn.

Thallus sordide albo-ochraceus tenuis continuus. Apothecia minuta (diam. 0·4 mm.) atro-fusca plana adnata, margine pallidiore—intus fuliginoso,—excipulo dilute colorato, strato subhymeniale fuscescente, paraphysibus gracilibus apice anthracinis. Sporæ in ascis clavatis aciculares utrinque attenuato-acutæ 13–20 septatae spiraliter curvatae, longit. ·075, crassit. ·002.

Lecidea melastegia, Nyl. in litt.

Ad cortices arborum.

17. *Bacidia anceps*, Kn.

Thallus cinerascens tenuis minute albo-granulosus continuus. Apothecia rufo-fusca v. nigro-fusca (diam. 1 mm.) marginata, disco plano, margine crasso fuso (intus fusco), excipulo crasso dilute luteo cellulari (cella quadrata) in granulis comminuatur, strato subhymeniale dilute succineo, paraphysibus discretis. Sporæ aciculares utrinque acutæ infra attenuatae circiter 16-septatae, septis distinctis, longit. ·07, crassit. ·002 mm.

Ad cortices arborum.

18. *Bacidia cerasentera*, Kn.

Thallus albo-cinereus areolatus tenuissimus v. macula alba indicatus. Apothecia atra minuta (diam. 0·4 mm.) innata v. adnata, in juvenis sæpe e thallo albo marginata, intus fusca v. purpureo-fusca, excipulo atro, margine concolore obscuro, paraphysibus crassis brevis excipulo atro enatis apice bulbosis purpureo-atris non bene discretis. Sporæ in ascis clavatis fusiformi-aciculares in arcum curvatae 7–9 septatae v. minus clare septatae, longit. ·045, crassit. ·004 mm.

Lecidea cerasentera, Nyl. in litt.

Ad cortices arborum.

19. *Bacidia melasema*, Kn.

Thallus ochraceo-cinerascens tenuissimus squamulosus, squamulis minutis arce adpressis, continuus linea atra limitatus. Apothecia ad-

nata atra convexa (diam. 0·8 mm.) intus colorata immarginata, excipulo glauco-nigricante v. nigro, strato subhymeniale (in sectione subtilissima) viridulo e pseudo-gonidiis liberis sphæricis oleaceis dilute viridis (aliis minutissimis aliis sat grandibus) formato, paraphysibus non discretis. Sporæ fusiformi-aciculares curvatae circiter 7-septatae, longit. ·032, crassit. ·004 mm.

Lecidea melasema, Nyl. in litt.

Ad cortices arborum.

20. *Bacidia mesospora*, Kn.

Thallus tenuis sordide fuscus effusus leproso-pulverulens. Apothecia luteo-rubella plana demum convexa (diam. 0·4), margine concolore demum obscuro, excipulo incolore, paraphysibus gracillimis adglutinatis. Sporæ in ascis clavatis bacillares rectæ non supra 8-septatae, interdum septis obscuris, longit. ·024, crassit. ·003 mm.

Ad cortices arborum.

21. *Bacidia stenospora*, Kn.

Thallus sordide ochraceus tenuis subtilissime areolo-granulosus (farinosus) indeterminatus. Apothecia pallido-livida ceracea plana adnata appressa (diam. 0·7 mm.) immarginata, excipulo luteo-fusco textura radiatim disposita, paraphysibus adglutinatis obscuris apice incoloratis non dilatis. Sporæ in ascis (longit. ·085, crassit. ·005 mm.) bacilliformibus aciculares rectæ gracillimæ circiter 30-septatae, septis parum obscuris, longit. ·075, crassit. ·0015 mm.

Ad cortices arborum.

22. *Bacidia pedicellata*, Kn.

Thallus cinerascens tenuissimus continuus. Apothecia superficialia (diam. 1·1 mm.) rufa v. fusco-rufa convexa nonnihil subglobosa, unde quasi pedicellata intus dilute fusco-lutea, margine obtuso concolore demum obscuro, strato subhymeniale fusco, paraphysibus concretis gracilibus apice non dilatis. Sporæ aciculares recte circiter 28-septatae, septis distinctis, longit. ·085, crassit. ·003 mm.

Supra Jungermannias.

23. *Bacidia rimosa*, Kn.

Thallus cinerascens tenuissimus effusus diffractus rimosus. Apothecia e strato thallode gonidiale enata rufa tandem rufo-fusea (diam. 0·6 mm.) plana marginata, margine concolore v. dilute concolore demum obscuro, excipulo dilute luteo, strato subhymeniale fusco, paraphysibus gracilis non bene discretis apice grumosis. Sporæ aciculares infra attenuatae, supra obtusæ, rectæ circiter 20-septatae, longit. ·054, crassit. ·0025 mm.

Ad cortices arborum.

24. *Bacidia carneo-rufa*, Kn.

Thallus olivaceo-fuscus tenuis leprosus effusus. Apothecia carneo-rufa (diam. 1 mm.) plana, margine concolore, excipulo pallido, strato subhymeniale fusco, paraphysibus adglutinatis apice non dilatis. Sporæ aciculares supra obtusa infra attenuatæ rectæ circiter 15-septatae, longit. ·065, crassit. ·002 mm.

Ad cortices arborum.

25. *Bacidia rosello-carnea*, Kn.

Thallus ochro-cinerascens v. ochro-fuscescens leproso-granulatus tenuis continuus v. minute areolatus interdum subrugulosus indeterminatus. Apothecia (diam. 0·5 mm.) adnata plana v. convexa sordide rosello-carnea tandem fuscescentia saepius in parte decolorata intus luteo-fusca, margine concolore v. pallidiore demum evanescente, paraphysibus adglutinatis obscuris grumosis apice non dilatis. Sporæ vermiformi-aciculares subspiraliter curvatae circiter 10-septatae, longit. ·05, crassit. ·002 mm.

Ad cortices arborum.

Lecidea rosello-carnea, Nyl. in litt.

26. *Bacidia pseudo-pyrra*, Kn.

Thallus olivaceo-fuscus tenuissimus (pellucidus ? unde matrice perluciente thallus coloratus). Apothecia luteo-alba minuta (diam. 0·3 mm.) convexa, margine concolore obscuro, excipulo incolore v. strato subhymeniale dilute fusco, paraphysibus adglutinatis obscuris non grumosis. Sporæ in ascis clavatis bacillares subcurvatae circiter 8-septatae, longit. ·04, crassit. ·0025 mm.

Ad cortices arborum.

Closely allied to *B. albescens*, Hepp.

27. *Bacidia leuco-carpa*, Kn.

Thallus albido-cinerascens leproso-granulosus tenuissimus indeterminatus. Apothecia albida v. carneo-alba adnata plana v. convexa immarginata (diam. 0·8 mm.), strato subhymeniale luteo-fusco, paraphysibus adglutinatis obscuris grumosis. Sporæ vermiformi-aciculares subspiraliter curvatae sat 10-septatae, longit. ·06, crassit. ·002 mm.

Ad cortices arborum.

28. *Bacidia spodoelæina*, Kn.

Thallus cinereo-olivaceus tenuis sublævis continuus indeterminatus. Apothecia fusca v. fusco-nigra (diam. 0·6 mm.) convexa, margine concolore, disco in juvenis aliquando pruinosa, excipulo albo, strato subhymeniale incolorato, paraphysibus gracilibus non bene discretis apice non dilatis. Sporæ bacillares circiter 18-septatae rectæ v. leviter curvatae, longit. ·06, crassit. ·003 mm.

Ad cortices arborum.

29. *Bacidia chryso-carpa*, Kn.

Thallus albus v. sordide albescens tenuissimus subleprosus v. leproso-granulatus v. pulverulens indeterminatus. Apothecia flavescentia convexa (diam. 0·8 mm.), margine concolore indistincto demum excluso, excipulo (viso per reflectam lucem) albo, strato subhymeniale dilute luteo-fusco, paraphysibus adglutinatis gracilibus non grumosis apice non dilatis. Sporæ aciculares gracillimæ, septis invisis, longit. ·06, crassit. ·002 mm.

Ad cortices arborum.

30. *Bacidia nanospora*, Kn.

Thallus cinereus tenuis subleprosus, granulas gonimas virides in nodulis magnis receptas continens. Apothecia e thallo oriunda (in juniore biatorina urceolata, disco sordide fusco, margine pallidiore ceraceo prominente erecto, strato subhymeniale dilute luteo-fusco) tandem convexa (diam. ·6 mm.) fusca, margine obscurato, excipulo fusco, paraphysibus adglutinatis brevibus. Spore in ascis clavatis vermiformi-aciculares, septis invisis, longit. ·02 mm., crassit. ·0013 mm.

Ad cortices arborum.

31. *Bacidia pannaroidea*, Kn.

Thallus sordide ochraceo-cinereus carroso-leprosus spongiosus diffractus, granulas gonimas virides in nodulis magnis receptas offerens. Apothecia rufa v. rufo-fusca (diam. 1·2 mm.) margine concolore obtuso demum tenui, excipulo fusco, strato subhymeniale atro-fusco, paraphysibus non bene discretis gracilibus apice non dilatis. Sporæ aciculares infra attenuatæ gracillimæ rectæ sat 16-septatae, longit. ·06 ad ·09, crassit. ·0015 ad ·002 mm.

Ad cortices arborum.

32. *Bacidia rhodocarpa*, Kn.

Thallus sordide ochraceus v. cinerascens pulverescens continuus, granulas gonimas in nodulis magnis receptas continens. Apothecia luteo-rufescens v. rubra v. demum fuscescentia plana marginata (diam. 0·8 mm.) margine concolore demum oscuro, excipulo luteo-fusco, strato subhymeniale atro-luteo-fusco, paraphysibus capillaribus discretis, apicibus non dilatis. Sporæ aciculares rectæ circiter 20-septatae, longit. ·06, crassit. ·002 mm.

Ad cortices arborum.

33. *Bacidia albido-prasina*, Kn.

Thallus glauco-albidus v. albo-smaragdinus tenuis lœvis continuus linea nigra limitatus. Apothecia carneo-alba adnata plana v. convexa (diam. 0·4 mm.) margine pallidiore demum oscuro, excipulo luteo-fusco, paraphysibus adglutinatis apice non dilatis. Sporæ aciculares simplices (septis invisis) gracillimæ, longit. ·05, crassit. ·002 mm.

Ad cortices arborum.

34. *Lecidea cerinocarpa*, Kn.

Thallus cinereo-viridis tenuis pulverescenti-granulatus, gonidiis veris flavo-virescentibus, interdum granulis goniatis in nodulis magnis receptis. Apothecia ceraceo-carneo-lutea convexa interdum discolorata marginata (diam. 0·8 mm.) intus incolorata, margine exacte concolore ex quo obscurato, paraphysibus capillaribus discretis. Sporae in ascis cylindraceis uniseriales ellipsoideae simplices incolores, longit. ·013 mm., crassit. ·006 mm.

Ad cortices.

35. *Lecidea rhypoderma*, Kn.

Thallus sordide fusco-virescens congesto-isidioso-farinosis friabilis diffractus, gonidiis veris flavo-virescentibus in massis magnis glomeratis. Apothecia fusca v. fusco-rufescens adnata (diam. 1 mm. v. minora) convexa immarginata intus luteo-fusca, strato subhymeniale fusco, paraphysibus brevibus (circiter ·04 mm.) adglutinatis apice non dilatis. Sporae cylindraceo-oblongae incolores, longit. ·008 ad ·01, crassit. ·002 mm.

Ad cortices.

The spores sometimes show a faint trace of a septum.

36. *Lecidea parvifolia* v. *corallina*, Tuck.

Thallus cinereo-glaucus squamuloso-microphyllinus continuus, squamu-lis corallinis v. lobato-palmatis, gonidiis veris flavo-virescentibus, hypothallo pallide fibrilloso passim conspicuo. Apothecia biatorina luteo-rubella plana immersa v. superficialia marginata intus pallida, margine concolore, disco plano interdum in centro depresso, paraphysibus haud bene discretis. Sporae in ascis parvis obovodeis ellipsoideae simplices incolores, longit. ·01, crassit. ·003 mm.

Ad cortices.

Agrees with Leighton's Ceylon Lichens No. 109, except that the spores are somewhat smaller (·015 × ·004 mm.); but differs widely from No. 110, in which the thallus is thin, powdery, and hypothecium black.

37. *Lecidea microdactyla*, Kn.

Thallus pallide cinereo-virescens flocculoso-corallinus v. flocculosogranulosus continuus, hypothallo pallido byssideo, gonidiis veris flavo-virescentibus. Apothecia biatorina luteo-rubella intus incolorata strato goniomico enata, margine evanescente, paraphysibus non discretis. Sporae cylindraceo-ellipsoideae simplices, longit ·015, crassit. ·0025.

Ad cortices.

38. *Lecidea conisalea*, Kn.

Thallus albo-virescens pulverulentus tenuis continuus, gonidiis veris flavo-virescentibus. Apothecia biatorina luteo-rubella plana v. convexa marginata intus incolorato (diam. 1 mm. v. minora), margine tenui vulgo